PRELIMINARY SPECIFICATIONS

CONNECTORS
ADSL interface: RJ45 and Bantam.
POTS interface: RJ11 handset.
Serial Port - 8 pin Mini DIN RS232C (V.24), DTE.
DC power jack.

DIGITAL DMM
DCV: 500 Volt full scale, +/- 1%.
ACV: 400 Volt full scale, +/- 1%.
DCA: 400 mA full scale, +/- 1%.
ACA: 400 mA full scale, +/- 1%.
Resistance: 40 Mohm full scale, +/- 1%.
Capacitance: 40 uF full scale, +/- 1%.

DIGITAL TIMS
Wideband TIMS: 20 kHz to 1.1 MHz, 200 Hz to 3.4 kHz.
IEEE 743 F & G filter noise measurement.
Signal to Noise (S/N) measurement.
Sweep tone generation: 20 kHz to 1.1 MHz, 200 Hz to 3.4
    kHz.

TDR
Range: 0 to 18,000'.
Adjustable velocity: 0.4 to 1.0.
Pulse: 10 Vpp, 20 to 500 nanosecond.
Display results to LCD screen.
Store 3 previous test results in graphical format.

ALCATEL ADSL PLUG-IN MODULE
Alcatel 3.0 chip set implementation.
Establish ADSL link with far end modem.
Up/down stream bit rate verification and BERT test.
Other modules to be announced.

POTS SPLITTER EMULATION
Emulate POTS splitter applications.
Provide direct handset interface/built-in hook control.
POTS shunt circuit on/off control.

GENERAL
Size: 10.5 x 6 x 27 cm (4 x 2.4 x 10.5")
Weight: 1.3 Kg (2.8 lb)
Construction: PC+ABS high-impact plastic.
Display: 32x16 graphic LCD with backlight.
        18 bi-color LEDs.
Battery: Rechargeable, field-replaceable NiMH pack.
        Provides 5 hrs of continuous use (nominal).
Charger: Universal design with IEC power cable connector.
        11 x 6 x 3.5 cm (4.3 x 2.4 x 1.4") with 122 cm (4')
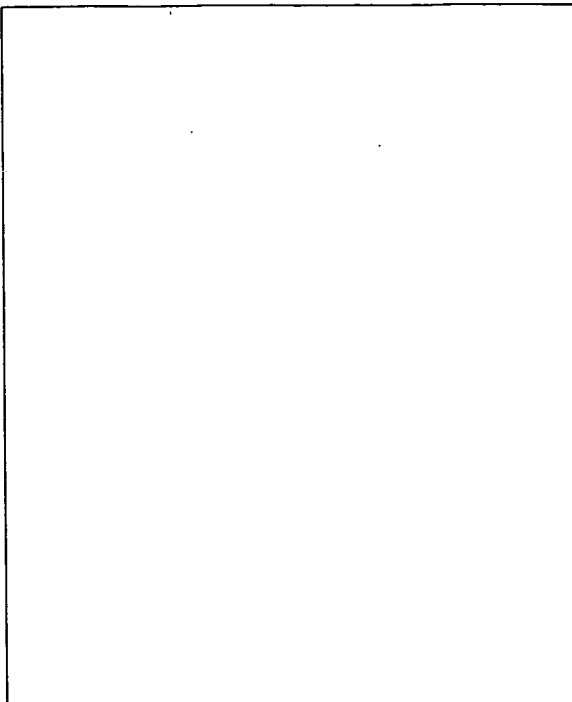
extension cable attached.
    9.75 oz.
    100 VAC - 240 VAC input.
    15 VDC, 2A output.
    Fast recharge in 3 hours (nominal).
    UL, CSA, CE approved.
Upgrade options via field-replaceable SunWare™ cartridge.

ENVIRONMENTAL
Operating temperature: 0 to 50 °C (32 to 122 °F)
Storage temperature: -20 to 70 °C (-4 to 158 °F)
Humidity: 5% to 90% noncondensing

Note: Specifications subject to change without notice.

Transmit range: -4 dBm to -14 dBm

STATUS/ALARM INDICATORS
Current and History status
T1-Line 1 & 2: Signal, Frame, Alarm, Idle/Disconnect, Error
T3-Line 1 & 2: Signal, Frame, Alarm, Error
SONET-Line 1 & 2: Signal, Frame, Pointer, Alarm, Error

TEST PATTERN GENERATOR
General: 1111, 0000, 1010, 1000
Programmable: 10 sets, 16 bits
PRBS : 2^n-1, n= 9, 11, 15, 20, 23, QRS

T1 rate add : 55 Oct, T1-6, DDS1-6, 1:7, 3-in-24

MEASUREMENTS
- G.821 , G.826 and general errors: Bit error, bit error rate, errored
  seconds, % errored seconds, severely errored seconds, % severely
  errored seconds, error-free seconds, % error-free seconds, available
  seconds, unavailable seconds, sync loss seconds, degraded minutes
SONET: Signal loss second, frame loss second, loss of clock second, out
  of frame, loss of pointer second, path AIS second, line AIS second,
  path yellow second, FEBE second, section CV B1, line CV B2, path CV
  B3, BPV, Positive/Negative pointer adjustments, APS counts, Path
  FEBE, frequency, new pointer
DS3: Frame loss seconds, loss of signal seconds, BPV, BPV rate, F-bit
  error, F-bit error rate, P-bit error, C-bit error, FEBE, AIS seconds,
  yellow alarm seconds, frequency
DS2: F-bit error, frame loss seconds, AIS seconds, signal loss seconds
DS1: BPV, BPV rate, F-bit error, bit error, CRC-6 block error, CRC-6 block
  error rate, BPV, out of frame count, change of frame alignment
  count, frequency, level, AIS seconds, loss of frame seconds, loss of
  signal seconds, yellow alarm seconds, low density seconds, excess
  zeroes seconds, frequency
VT1.5: VT LOP seconds, FEBE, VT yellow alarm seconds, VT AIS
  seconds, BIP-2 error, VT pointer Positive/Negative adjustment, New
  Data Flag

Measurement Mode : Single, Repeat, Manual
Measurement duration:
  Continuous
  Timed, up to 100 days
Programmable start and stop time
  Start date YY:MM:DD
  Start time HH:MM:SS
Print results
  Timed :   every 1 to 9999 minutes
  Last :   at the end of measurement
  Event : when an event occurs

OTHER MEASUREMENTS

View Received Data
- View T1 data in binary, hex, ASCII
Shows data in bytes by time slot

Bridge Tap
Automated transmission and measurement of 21 different patterns to
  identify possible bridge taps on line.

CSU & NI Loopback Control
In-band Codes
  CSU, NI, 100000
  10 programmable user patterns
ESF-FDL
  Payload, Line, Network
  10 programmable user patterns

Westell & Teltrend Looping Device Control
Automated looping of Westell and Teltrend line and central office

repeaters. Includes SF and ESF modes, arm, loop up/down,
loopback query, sequential loopback, power loop query, span
power down/up, unblocking.

ESF Facility Data Link
Read and Send T1.403 message on FDL (PRM and BOM)
  Automatic HDLC protocol handling
YEL ALM, LLB ACT, LLB DEA, PLB ACT, PLB DEA
AT&T 54016 24 hour performance report retrieval
T1.403 24 hour PRM collection per 15 min interval

SLC-96 Data Link
Send and receive message
WP1, WP1B, NOTE formats
Alarms, switch-to-protect, far end loop
To TR-TSY-000008 specifications, mode I and III

Westell & Teltrend PM NIU and MSS
Supports Westell and Teltrend performance monitoring network
  interface unit and maintenance switch system with ramp. Set/
  query NIU time and date. Query performance data by hour or
  all. Reset performance registers. Read data over RAMP line.
  Perform maintenance switch.

DDS Basic Package
Test rates: 2.4, 4.8, 9.6, 19.2, 56, 64 kbps
Patterns: 2047, 511, 127, 63, all 1s, all 0s, DDS-1, DDS-2, DDS-3,
  DDS-4, DDS-5, DDS-6, 8-bit user, alternating 1010
Loopbacks: Latching, interleaved. CSU, DSU, OCU, DSO-DP, 8-bit
  user.
Measurements: Bit errors, Bit error rate
Control code send/receive: abnormal, mux out-of-synch, idle

Switched 56 Tests
Switched 56 call set up and bit error rate testing
Teleos signaling sequence timing analysis and dial digits decoding

Fractional T1
Error measurements, channel configuration verification
Nx64 Kbps, Nx56 Kbps, N=1 to 24
Sequential, alternating, or random channels
Auto scan and auto configure to any FT1 order

VOICE FREQUENCY CAPABILITIES
Monitor speaker with volume control for Line 1 & 2
View all 24 channel A,B (C,D) bits for Line 1 & 2
Control A,B (C,D) bits (E&M ground/loop start, FXO, FXS, on/off
  hook, wink)
Companding law - u or A
Programmable idle channel A, B (C, D) bits
Selectable idle channel code, 7F or FF hex
VF Level and Frequency Measurement
  Level: +3 to -60 dBm, resolution 0.1dBm
  Frequency: 50 to 3950 Hz, resolution 1 Hz
VF tone generation
  Variable tone: 50 to 3950 Hz @ 1 Hz step. +3 to -60dBm @
  1dBm
  Fixed tones: 404, 1004, 1804, 2713, 2804 Hz @ 0dBm and -
  13dBm

Noise Analysis
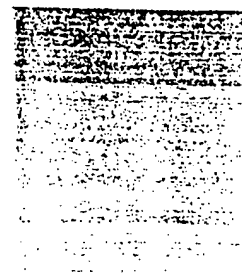Signal to noise (S/N)
Noise with filters:
  3 kHz flat, C-message, C-notch

MF/DTMF/DP Dialing, Decoding/Analysis
MF/DTMF/DP dialing up to 32 digits, 10 user programmable quick
  dial number for each tone type

MFR1 digits, 0 - 9, KP, ST, ST1-3, Pause
DTMF digits, 0 - 9, *, #, A, B, C, D, Pause
DP digits, 0 - 9, Pause
MF/DTMF decode up to 40 received digits. Analyze number, high/low
frequencies, high/low levels, twist, tone period, interdigital time.
Analyzer dynamic range: 0 to -25 dBm
DP decode up to 40 digits. Analyze number, %break, PPS, interdigital
time.
Programmable interdigital period, tone period, and tone level (MF,
DTMF)
Programmable %break and interdigital period @ 10 pps (DP)

Signaling Analysis

Analyze mode:
· Tracer on A, B (C, D) signaling state changes for Line 1 & 2 with time
stamps
MFR1 - timing analysis of signaling transition states and dialing digits
decoding of MFR1 signaling
MFR1M - Modified MFR1 CO switches signaling analysis
MIXTONE - Decode a signaling sequence that has both MF and DTMF
digits

PROTOCOL ANALYSIS
SS7
Layer 2, 3, 4 analysis to bit level
SU traffic analysis:
    Counters for FISU, LSSU, TUP, ISUP, SNM, SNT messages
    Counters for FIB and BIB retransmissions
    % analysis on different types of messages
MSU tracer:
    User programmable trace filter; CIC, DPC, OPC, H1H0, Signalling
    address.
    View bi-directional real time message flow.
    Messages are interpreted up to layer 4 or displayed in hex format.
    The trace storage holds up to 1000 messages.

ISDN
Bi-directional Primary Rate Access (PRI)
User programmable trace filter, view bi-directional real time message
flow. Messages are interpreted up to layer 3 or displayed in hex
format.
Trace storage holds up to 1000 messages with time stamps
Voice and data call set up and receive
Built-in microphone and speaker for B channel talk/listen
Bit error rate test with G.821 analysis
Generates 2047, 511, 127, 63, all 1s. all 0s, and user programmable 8 bit
test patterns
Supports Nx64K and Nx56K data calls
Programmable received data call loop back or send test pattern
Supports 23B+D, 47B+D, and 46B+D+D
NT & TE emulation
National ISDN-2, AT&T 5ESS, ETSI, and Northern Telecom DMS-100
compatible
On-screen help for special optional call feature programming

GENERAL
Two PCMCIA slots for firmware cards, data storage and features update
Internal NVRAM data buffer
120 mm x 90 mm Color LCD with backlight
Remote control with TL1 command language
Bench top or rack mount operation
19 inch or 23 inch rack mount kit with front patch panel

Power Supply :   90 - 260 VAC, 47 - 63 Hz
Operating Temperature :   0°C to 50°C
Storage Temperature :-20°C to 60°C
Humidity : 20% to 85% non-condensing
Size :   254 mm(W) x 178 mm (H) x 330 mm (D)
Weight :   4 Kg (approx)